




Electronics
Industry
in **Serbia**






"The best economic reform programme in Central and Eastern Europe," was how Mr. Rory O'Sullivan, the World Bank's Country Manager, in a Financial Times interview in January 2003, acknowledged the speed with which Serbian reformers have stabilised the economy and established a foundation for growth.

Source: Serbia World Report – Financial Times, January 28th 2003



Electronics Industry in Serbia



As a consequence of successful economic reforms and a deep-rooted commitment to education, Serbia now has the attributes to competitively satisfy the needs of international electronics companies seeking to increase manufacturing, research & development, and shared service activities in Europe.

Following a World Bank-compliant tender process, Deloitte & Touche was commissioned in the second quarter of 2003 to undertake a detailed SWOT and benchmarking assessment of Serbia as a location for electronics related activities. This study represents the core data source for the sector specific information presented in this publication.

Electronics Sector at a Glance

Serbia hosts 1,320 electronics enterprises, of which most are small and privately owned (90%), contributing 1.1% of the country's GDP and 2.5% of exports*. In 2002, the electronics industry employed 24,700 people representing 1.84% of the working population.

- The electronics industry, like most sectors of the Serbian economy, suffered a major negative impact as a consequence of the break-up of the former Yugoslavian market, UN sanctions in 1992 and, ultimately, the NATO campaign in 1999.
- Recovery in the electronics sector underpinned GDP growth of 5.5% in 2001 and 4% in 2002. In terms of industrial production, the consumer electronics sector, at 72.4%, recorded the highest growth in 2002.
- Historically, most large Serbian electronics companies fostered extensive international partnerships.
- The renaissance of the Serbian electronics sector is underway – between 1999 and 2000, the segment covering the production of computers and office machines grew by 50%.
- Core products manufactured in Serbia include TV and radio receivers, telephone sets, power transformers, and batteries, along with “white goods” like refrigerators, washing machines and tumble dryers.
- That the value of electronics imports in 2001 was around seven times higher than exports indicates an economic transformation-driven demand for technology equipment and domestic market leverage opportunities for investors in Serbia.
- The customs regime is sufficiently well developed to support “inward processing relief” deals to effectively serve customers throughout Europe, and in the case of the Russian market, Serbian manufactured goods are treated as domestic products.
- The average net monthly salary within the sector was around €133 in 2003.

*based on 2001 data

Key Benefits

The ability to serve customers in Europe while capitalizing on burgeoning market opportunities, courtesy of Serbia's free trade agreements in the region, and with the Russian Federation with its 150 million consumers.

Market Leverage

The average savings on the annual salary bill for a 300 person operation in the electronics sector, vis-à-vis Hungary or the Czech Republic, will be in excess of €1 million per year.

Cost Efficiency

Employees with an university and two-year college degree account for over 13% of the total number within the electronics industry and this, combined with the annual average graduate output from technical faculties of around 2,700, holds the key to Serbia's future international competitiveness in the sector.

Intellectual Capital

Prior to the economic sanctions of the 1990's, Serbian companies had established a deep-rooted partnership and collaborative manufacturing agreements with most of the leading world class telecommunications and electronics companies.

Partnership Culture

The links of the electronics value chain are not as strong as they were in the late 1980's. However, despite under capitalization and current gross over-capacities, Serbia does boast an extensively integrated electronics sector, and many of the building blocks for a renaissance, like intellectual capital, full commitment to international quality accreditation, a strong platform for R&D and continually improving investment climate are in place.

Local Sourcing

The best command of the English language in Central and Eastern Europe by a very wide margin, according to a survey by Gallup International.

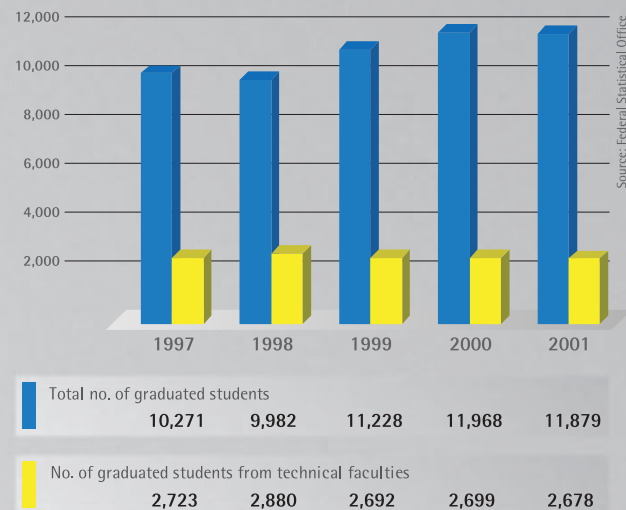
Linguistic Skills

Skilled Labour Availability

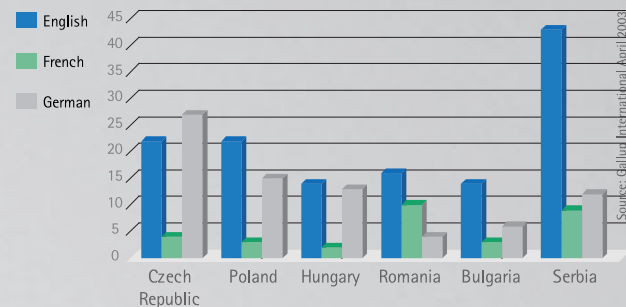
The electronics industry in Serbia employed around 24.700 workers in 2002, with the average monthly net salary amounting to around €133.

Given the dramatic changes within the electronics sector over the last ten years and the retrenchment that has taken place within the sector in Serbia, there is obviously scope to improve the technology skill base to support the most advanced forms of electronics processes, production and research and development. However, high academic qualifications within Serbia's electronics sector do represent a robust platform for retraining to bridge any skill gaps.

Number of graduated students from universities in Serbia in the last five years



Employees with a university and two-year college degree account for over 13% of the total number employed within the electronics industry. Indeed, those who are non-skilled only account for 9% of the total in the sector.



Percentage of population speaking foreign languages

Cost Efficiency

Source: Dresdner Bank

Utility costs and corporate profit tax rate at only 14%, are among the lowest in Europe. Moreover when a fixed capital investment exceeds €10 million, creates over 100 jobs and brings value-added benefits to the local economy, a 10 year tax break further enhances the profitability of establishing a business in Serbia.

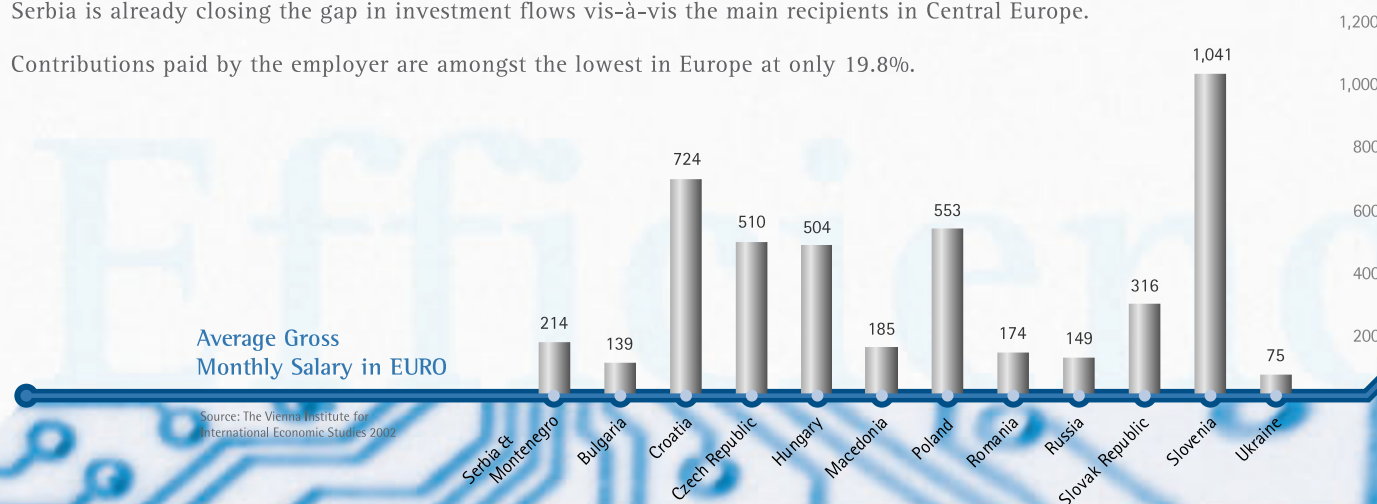


Labour Costs

The average net monthly salary within the sector was around €133 in 2003. This is low in comparison with the leading recipients of FDI in Central Europe, like the Czech Republic, Hungary and Poland.

Even if a foreign investor paid twice the average electronics sector monthly salary, the annual labor cost savings in comparison with the Czech Republic, for a 300 person operation, would be in excess of €1 million. Add to this the lowest utility costs in the region, one of the lowest corporate tax rates in Europe, and an attractive incentives package, it then becomes self-evident why Serbia is already closing the gap in investment flows vis-à-vis the main recipients in Central Europe.

Contributions paid by the employer are amongst the lowest in Europe at only 19.8%.



Research and Development

The main research and development institutes in the area of electronics include:

Mihajlo Pupin Institute, Belgrade - Research and development practices encompass:

- design and production of new computer systems
- development of simulators and training systems
- telecommunication systems architecture
- digital signal processing
- artificial intelligence and expert systems – mainly for flexible automation and robotics;

Nikola Tesla Institute for Electrical Engineering, Belgrade;

Institute for Technical Science, Belgrade, established in 1947 – from the initial focus on mechanical engineering, the institute has now developed expertise in advanced materials science, robotics, microelectronics and optoelectronics;

University of Belgrade, School of Electrical Engineering, established in 1948. The faculty has four departments:

- Control, Electronics and Telecommunications
- Computer Engineering and Information Theory
- Power Engineering
- Physical Electronics

Those departments practically cover every area of electronics-related study and are extensively involved in collaborative research with national and international companies.

IRITEL, Zemun – was established in 1967 as a company with its own R&D institute focusing on public communication systems, digital data transmission, software design and research of materials and hybrid microelectronics;

IMTEL, Belgrade – was established in 1976 concentrating on the development and production of microwave integrated circuits;

Institute for Energetics, Electronics and Telecommunications, Novi Sad (within the Faculty of Engineering, Novi Sad).

Technology Parks

The industrial property market in Serbia is embryonic with little by way of comparative evidence for valuation purposes. However, SIEPA is regularly updating its database of Greenfield and Brownfield property options. Moreover, the Ministry of Science and Environmental Protection has initiated the creation of several science and technology parks. Discussions are ongoing with developers to create a business environment within the parks matching the best in Europe.

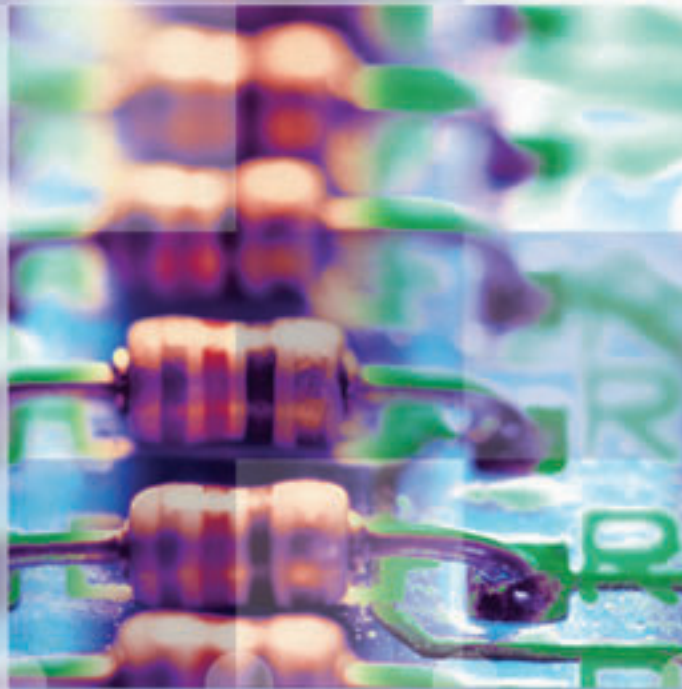
The first phase of the **Zvezdara Science and Technology Park** should include up to 12,500 m² for business, software development and R&D-type activities, while the **Technology Park** at the heart of one of Serbia's main electronics clusters, Niš, should accommodate a first phase amounting to 4,290 m². The **Novi Sad Science and Technology Park** is being designed to provide 10,000 m² of accommodation and host the Electronics Institute.



Technology Park Vršac

- The Technology Park development area is situated in the southwest part of Vršac in the area between the Belgrade - Vršac - Timisoara (Romania) railroad and the main Belgrade - Vršac - Vatin (Romania) highway.
- 400,000 people live in the travel-to-work area around Vršac with excellent access to the university centers of Belgrade, Novi Sad and Timisoara.
- It also directly borders the Hemofarm Group complex. The surface area which covers 30 hectares has well-equipped infrastructure (roads, connections to waterworks, sewage systems, electrical energy supply, telecommunication networks, gas mains, landscaping, and parking lots), with a customs outpost and freight companies in the immediate vicinity.
- The Yugoslav Airlines flight academy and its accompanying airport are also located on the outskirts of Vršac. The runway can currently be used for business purposes. The expansion of the existing Vršac airport is in the planning process.
- Selected lots are intended for construction of medium-sized enterprises with facilities up to 1,000m². Construction of greater industrial capacities, 1,000 to 4,000m² or even more, is possible through the merging of several lots that are 72m wide and 126m long.

Quality Standards



The electronics sector, despite under-capitalization, has been quick to recognise the importance of international quality accreditation and full compliance with European Union guidelines. The vast majority of companies comply with ISO 9000 and ISO 14000 or equivalent accreditation.

Cooperation with Foreign Partners

Company profile

As a consequence of the legacy of the economic sanctions of the 1990's, foreign direct investment has only started to flow, primarily as a consequence of the catalytic impact of the privatization process. This section profiles several of the leading Serbian electronics companies – many of which represent excellent investment opportunities in situations where they have yet to be privatized or are interested in establishing strategic partnerships.

El Holding Corporation, Niš



- Established in 1946.
- Major producer of x-ray equipment, consumer electronics and home appliances in the Balkans – group comprises 73 enterprises, of which 47 are production-related.
- Has own Research and Development Institute along with 11 various laboratories.
- Long tradition of collaboration with world class companies like Alcatel, Siemens, Philips, Sagem, Bull, etc.
- El Holding Corporation Niš has around 5,000 employees with both complexity and a high degree of vertical integration within the group, which is being heavily restructured.

- Established in 1948.
- Major producer of electron tubes.
- Foreign Partners – Philips granted first production licence in 1959.
- 250 employees generated export sales of 85% in 2001, with the United Kingdom accounting for 56%.

El Elektronske cevi, Niš

- Established operations in 1983.
- Only producer of color CRTs (cathode ray tubes) in the Balkans.
- Foreign Partners – plant was designed and built according to Philips technology and specification with an annual capacity of 250,000 units.
- In 2002, capacity ran at ca. 140,000 CRT units representing only 1.5% to 2% of European market.
- As of December 2001, company assets exceeded €50 million with the workforce of 524 generating sales of around €3 million.

El Kolor katodne cevi, Niš



Tehnicom, Belgrade

Established in 1991.

Mainly sales and service along with technical support for computer and telecommunications equipment.

Foreign Partners – in recent years, started to assemble Philips TV sets and provide a wide range of post-buy services.

350 employees generated sales of over €16 million in 2001.



VF Holding, Belgrade

Established in 1966 and “spun off” of EI Niš in 1992.

Leading producer of radio, TV and telecommunication equipment.

Foreign Partners – as a joint venture with Siemens, VF-TEL was established in 1990. Siemens became the majority stakeholder in 1996 and five years later became the sole owner of VF-TEL.

Of the 145 employees, 28% hold a university degree, while a further 8% hold a two-year degree.

VF-TEL, owned by Siemens AG Austria, employs around 230 people and generated sales of €6 million in 2001.

Business cooperation between Siemens and Serbia dates back to the end of the 19th century. The VF-TEL production plant in Belgrade is in the process of restructuring and renewed manufacturing will complement extensive sales and service activities.



Pupin Telecom, Belgrade

- Established in 1947.
- Producer of telecommunications equipment.
- Foreign Partners – a joint venture with the American company GTE was established in 1980 in order to produce telephone exchanges, and in 1990 a JV was established with the French company Alcatel to manufacture and maintain switching systems.
- As of June 2002, the company had 750 employees generating sales of around €9 million.
- The Alcatel (56%)/Pupin (44%) joint venture, Alcatel Pupin Yugoslavia, employs around 40 employees with an asset base of ca. €10 million.



DZITI Komunikacije, Belgrade

- Established in 1984.
- Leading producer of digital telecommunications equipment in the Balkans.
- Foreign Partners – the company was established through a joint venture between GTE and Elektronska Industrija, and by 1989 was producing and selling the greatest number of OMNI type PBX's in Europe.
- Company has been operating independently since 1991 under the new name – DZITI Communications, which operates in accordance with ISO 9001 and produces for several brand leaders like Ericsson, NEC and Benning.
- Around 150 employees generate sales of circa €3 million.

Investment Incentives

Tax Incentives

Serbia offers both new and existing investors a range of incentives aimed at enhancing the country's competitiveness as an investment location.

- Among the lowest corporate profit tax rate in Central and Eastern Europe – 14%.
- 10 year tax holiday for investments over €10 million and employment of more than 100 new workers.
- Tax relief equating to gross salary plus employers contributions for every new employed worker during a period of 2 years.
- Tax credit for up to 40% of investment amount for investing in fixed assets.
- Accelerated depreciation of environmental, educational and computer equipment.

Other Incentives

- Import of equipment and other assets as well as construction materials representing a foreign entity's investment is exempt from customs duties.
- Import of raw materials, semi-finished and component parts carried out for the purpose of realization of a long-term production contract in cooperation with a foreign producer, is exempt from customs and other import duties.
- The liberalization of property laws made it possible for foreigners to own real estate.

What can SIEPA do for you?

The Serbian Investment and Export Promotion Agency is a government agency with the mission to attract, facilitate and support the inflow of foreign direct investment into Serbia and to promote Serbian exports worldwide.

We will help you seize business opportunities emerging in Serbia by:

- anticipating and responding to your needs, providing that your project will positively impact on the Serbian economy
- providing you with relevant information on the investment environment, incentives for investment, investment-related legal framework and, most importantly, to help you quantify the considerable benefits Serbia can offer your company
- helping you find appropriate Greenfield and Brownfield site options
- assisting you in obtaining permits and licenses required by national and local authorities
- organizing visits to supplier companies and to potential partners
- presenting you ready-to-invest projects
- assistance in sourcing a wide range of high quality products and services from enterprises in Serbia.

Trouble-Free Investing

By working directly with government offices and businesses in Serbia, SIEPA makes investment easier and less complicated. SIEPA works with:

- Tax and customs authorities;
- Municipal authorities and local self-government;
- The Building Directorate of Serbia and the Agency for Building Land and Construction of Belgrade;
- Statistical bureaus;
- Chambers of commerce;
- The National Bank of Serbia.

On behalf of international investors, SIEPA liaises with all relevant public and private sector offices. Answers to tough questions are fast and direct from the source.

www.srbia.sr.gov.yu

Foreign Investors Council

On July 16th 2002, representatives of 13 foreign companies signed a statute on the founding of the Foreign Investors Council, with the aim of creating better conditions for attracting foreign investments to Serbia. The FIC now consists of more than 80 respectable companies. The founders of the FIC are:

- British American Tobacco d.o.o. - South-East Europe
- BULL HN - Information Systems Yugoslavia d.o.o.
- Delyug a.d.
- HVB Bank
- Beogradsko Mesovito Preduzece d.d.
- Mercedes-Benz Srbija i Crna Gora a.d.
- Novi Popovac a.d.
- OMV Jugoslavija d.o.o.
- PriceWaterhouseCoopers d.o.o.
- Siemens d.o.o.
- Societe Generale Yugoslav Bank a.d.
- Tetra Pak Production d.o.o.
- Tehnogas a.d.
- VELUX d.o.o.

Aims of the Council

- Improvement of the investment and business development climate in Serbia by making concrete reform proposals.
- Stimulation of foreign direct investments.
- Promoting communication between FIC and Serbian authorities.
- Assistance in overcoming difficulties which may exist in relations with foreign investors.
- Linkages with other foreign investor organizations across the SEE region to benefit from best practices sharing.
- Studying concrete means to facilitate regional operations.
- Facilitating the flow of information between FIC members and the Government.

www.fic.org.yu



The Multilateral Investment Guarantee Agency (MIGA) is a member of the World Bank Group and promotes foreign direct investment in emerging economies through:

- political risk insurance;
- advisory and capacity-building services for investment promotion intermediaries
- online information on investment opportunities worldwide.

It is widely recognized that the investment climate in Serbia has improved dramatically in recent years. However, to further enhance investor confidence, attention is drawn to the fact that MIGA can provide political risk insurance, guaranteeing new, cross-border investments, as well as investments associated with expansion, modernization, or financial restructuring of existing projects, and acquisitions involving privatisation of state enterprises.

www.miga.org

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Acknowledgements Disclaimers

Financial support for the sector analysis and publication of this report was courtesy of a contribution from a World Bank Trust Fund Grant aimed at accelerating private sector development in Serbia.

The views expressed in this publication are those of the author and do not necessarily reflect the views of the World Bank or MIGA (Multilateral Investment Guarantee Agency).

This publication is an output of the capacity building program, for SIEPA, designed and managed by the Investment Marketing Services Unit of MIGA.



